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Proceedings from the National IRM

Planning Workshop

Washington Plaza Hotel, Thomas Circle
Washington, DC

December 11-12, 1991

Organized by the Extension Service - USDA
and the Forum for Animal Agriculture

with the assistance of the

Agricultural Research Service
and the Cooperative State Research Service

Extension Service, U.S. Department of Agriculture, Washington, DC 20250

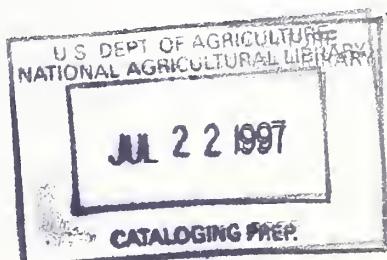
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Agenda: National IRM Planning Workshop

December 11, 1991

Morning Chair: Gary Wilson, NCA

9:00 a.m. A Brief Overview of the Purpose and Workshop Format, Gary M. Weber, Extension Service - USDA

9:10 a.m. Commodity Group Presentations: What does IRM mean to your group, how do you see it contributing to your industry meeting the challenges to be globally competitive, economically viable, and environmentally sound?

Martin Jorgensen, Beef Producer, and Chair of the National Cattlemen's Association National IRM Coordinating Committee, Ideal, South Dakota

Mike Wehler, Pork Producer and Past President of the National Pork Producers Council, Plain, Wisconsin

Paul Rodgers, Sheep Producer and Director of Producer Services for the American Sheep Industry Association - Sheep Industry Development, Inc., Christiansburg, Virginia

Frank Dickenson, Chief Executive Officer, National Dairy Herd Improvement Association, Columbus, Ohio

John Adams, Director of Milk Safety and Animal Health, National Milk Producers Federation, Arlington Virginia

Joseph Pocius, Director of Science and Technology, National Turkey Federation, Reston, Virginia

12:30 p.m. Afternoon Chair: Vivan Jennings, Deputy Administrator ES-USDA

Meeting the Challenges Facing Producers In The Livestock, Dairy, Poultry, and Aquaculture Industries: Examples of Successful Programs and Approaches and How are Research and Education Needs Identified.

30 Minute Presentations, Brief Questions and Answers

An Overview of the North Carolina Swine Nutrient Management Program
Roger Crickenberger, North Carolina State University

Challenges Facing the Sheep Industry: Research and Education Needs
Kris Ringwall, North Dakota State University

An Overview of Extension Poultry Programs
Richard Reynnells, Poultry Science ES-USDA

2:35 p.m. Research and Education Needs and Approaches for Aquaculture
Gary Jensen, Aquaculture ES-USDA

The Dairy Database System and Approaches to Decision Support Systems, Dewayne Dill, University of Illinois

An Overview of Beef Cattle IRM Programs
Ed Duren, University of Idaho

4:15 p.m. Break-out Sessions: As a result of hearing these discussions, what appear to be the essential components of successful research and educational programs. In short "What is IRM?"

December 12, 1991 Morning Chair: Paul Rodgers, ASI

8:00 a.m. Break-out Group Presentations and Consensus on What is IRM

9:30 a.m. General Discussions Regarding How and What Issues Should be Addressed Under an IRM Program. How Should These Issues be Determined in the Future?

10:45 a.m. If Funds are Appropriated for IRM, What "Models" Exist For Fund Distribution?

15 minute presentations on the **Administrative Structure Utilized in the Following Programs for Awarding Competitive Grants**. These discussions should be limited to the following key points: **Criteria for selection, Who is eligible, Mechanism for prioritizing and project selection.**

CSRS National Research Initiative Model, Sally Rockey, CSRS
ES Water Quality National Initiative Model, Andy Weber, ES
CSRS - LISA Model, George Bird, CSRS
Residue Avoidance Program (RAP) Model, Basil Eastwood, ES

Afternoon Chair: Dr. William Van Dresser, AVMA

1:00 p.m. Discussion Regarding The Merits of Various Funding Models

1:45 p.m. Review of Issues Relating to Priority Setting, IRM Programming Models and Funding Structure: Recommendations to USDA

National Integrated Resource Management Planning Workshop

Executive Summary

On December 11-12, 1991 a workshop was conducted in Washington, DC to coordinate the development of Integrated Resource Management (IRM) Program included in the 1990 Farm Bill. The workshop was planned by the Forum for Animal Agriculture (FFAA) and the USDA-Extension Service, with the assistance of the Agricultural Research Service and the Cooperative State Research Service. The workshop was attended by livestock producers, commodity and professional association staff, and USDA agency staff. This report on the workshop has been prepared for distribution to individuals interested in the IRM concept and to those participating in program development priority planning, project selection and funding.

The workshop sought to address three issues: 1. what is IRM; 2. what structure will best support IRM planning and implementation; and 3. what are the priorities which should be addressed through IRM?

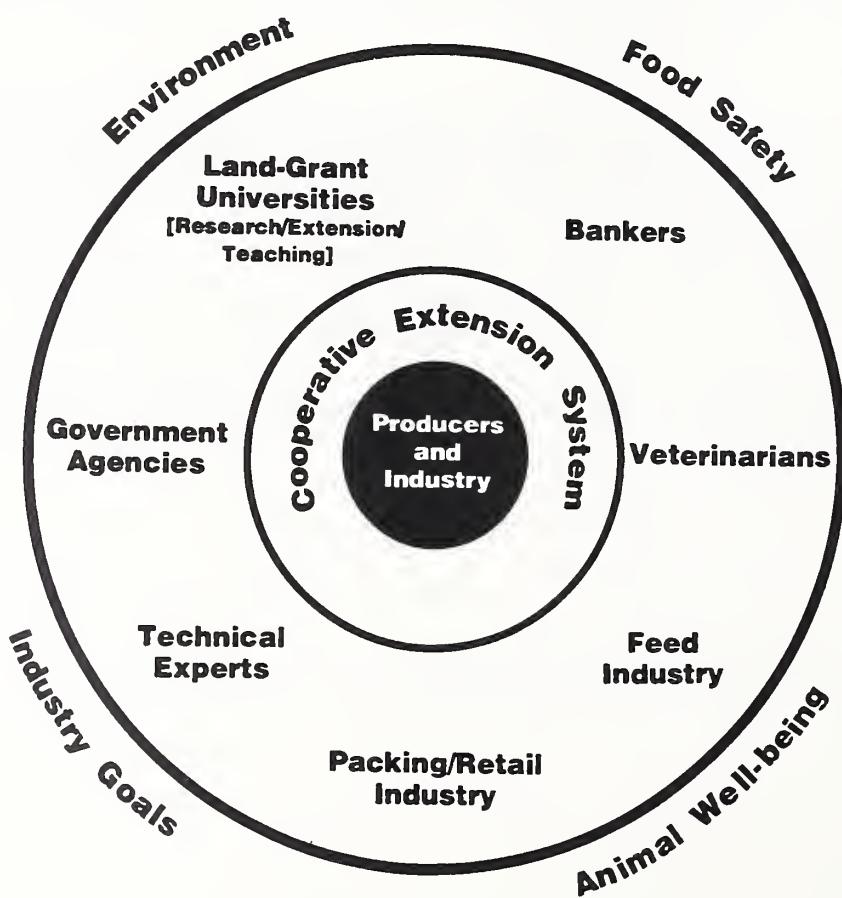
As a result of break-out sessions and discussions, the group reached agreement on the following points:

1. **The Definition of IRM is "An interdisciplinary approach to identify and implement farm and ranch management decisions that help producers/industry use their resources to attain their goals within the context of society's concerns.**
2. **IRM should serve as a problem solving and prevention mechanism, at the producer and industry level. Key components of IRM projects will include: resource inventory, identification, prioritization, on farm/ranch implementation and evaluation. The FFAA and its member organizations and professional societies of agriculture research and education will provide recommendations for IRM programs. The Forum for Animal Agriculture, and Research and Education levels. Thus, evaluation is an integral component of any IRM activity.**
3. **IRM's highest priority issue is managing the impact of animal agriculture on the environment**

Figure 1 graphically depicts the forces, issues etc... which impact the producer and the industry, as depicted by the inner circle. Extension (as depicted as a circle close to the producer/industry circle) can work closely with producers to help them and the industry harness resources. There are many "people" resources which the producer can draw upon to help them address the issues, as depicted just within the large outside circle in the figure. This is complicated because addressing one issue (ie. those outside the large circle) may impact on another issue in a negative manner. For instance, achieving an industry goal, such as profitability, needs to be addressed in such a way as not to negatively impact the environment, animal well-being or food safety. Thus the need for an interdisciplinary approach utilizing all available resources.

FIGURE 1

Issues and Resources Managed through IRM



Reports of the Break-out Sessions

Group 1

What is IRM?

An interdisciplinary systems approach to identify and implement farm/ranch management strategies that are:

economically profitable
environmentally sound
socially acceptable and lead to obtaining personal, family and community goals

Essential Components

- 1* Producer/Industry Driven
- 2 Site Specific
- 3* Research Based
- 4 Goal Oriented and/or
- 5* Problem Solving
- 6 Serves commercial livestock, poultry and aquaculture

*Denotes high priority components

IRM: A Philosophy - Mindset -- Of Problem Solving

People	Similar to TQM Leading to Goal Attainment
Issues/Opportunities	
Process/Interdisciplinary, Integrated	
Information and Data	
Technology	
Target - Profitability, Recognition, Sustainability	

Group 2

What is IRM?

Integrating farm resources, national resources, human resources
 Efficient use of resources by producers
 Harnessing available resources of producers and information
 Based upon producers goals such as a focus on consumers and what they may want, "Danish Hams" for instance, as well as their production goals such as profitability.

A diagram depicting various issues influencing producers was developed by Group 2. Figure 1 represents this conceptual view of IRM after further discussion by both groups.

Problem Solving Approach

Multi-agency Approach
Preventative Approach
Interdisciplinary Approach
Systems Approach
- More factors
- More players

Delivery System

A multidisciplinary approach to help individual producers make decisions that harness their various resources optimally to attain their goals.

Industry Competitiveness
Delivery Systems??
Solve Problems
Identify Opportunities

Joint Discussion Session

"Final" Definition:

An interdisciplinary approach to identify and implement farm and ranch management decisions that help producers/industry use their resources to attain their goals within the context of society's concerns.

IRM should also serve as a Problem Finding Mechanism

- at the program level
- at the producer and industry level
- at the Forum for Animal Agriculture, Research and Education levels
- Evaluation requirement
- Implementation -- Needs Identified

What is the most pressing issue that the IRM approach should be used to address over the next year or two. The group almost unanimously felt the Environment Issue is a Key concern.

What are the various issues and concerns regarding development of a "model" for managing the funding of IRM projects?

Group Consensus

1. There is a need to identify issues and priorities. Currently issues relating the impact of livestock on the environment is viewed as an important issue.
2. There needs to be more dialogue regarding how projects funded through an IRM program should be selected and who is eligible to receive funds.
3. The Forum should play a lead role in providing recommendations as a Departmental program to manage IRM funding develops.

Prioritization of Issues and Priorities

The Forum for Animal Agriculture should play a lead role in advising the Department of Agriculture about IRM. The Forum should solicit and incorporate the views of technical advisors into any recommendations submitted to the Department of Agriculture.

Priority Setting

The NCA approach to setting priorities relating to IRM was discussed. The NCA approach is composed of two primary components. These components include the **Research and Education Committee** and associated **IRM Subcommittee**. Both the committee and subcommittee are comprised of NCA members.

The NCA IRM Subcommittee receives recommendations from the **National IRM Coordinating Committee**. This committee is not a component of the NCA structure. It is comprised of NCA members and non-members, technical advisors, university research & Extension, bankers, agribusiness and others involved in the cattle industry.

There was no discussion of how other Forum members should establish priorities within their respective organizations.

For the purposes of priority setting, the Forum for Animal Agriculture should play a lead role by representing the collective agreement on the issues from all the members of the Forum.

Recommendations of Member Organizations of the Forum For Animal Agriculture: Consolidated Support for Issues Carried to:

↗ ↓ ↘

USDA Other Agencies Capitol Hill & Organizations

The net effect will be to receive funding targeted to address specific issues to be addressed by specific agencies.

Project criteria were discussed briefly and the component parts of the final IRM definition depict the key components which must be contained in any project proposal.

Evaluation of IRM projects to insure they have the intended impact and thus continue to be supported is very important. No evaluation structure or particular methods were discussed.

There was a discussion regarding how priorities should be set. Gary Wilson discussed how priorities are set by the membership of NCA and that then staff are expected to work to ensure the memberships priorities are addressed by the research and education system.

**NATIONAL IRM WORKSHOP
COMMODITY GROUP PRESENTATION
BEEF PRESENTATION BY MARTIN JORGENSEN**

I. What is IRM?

NCA's definition of IRM: "a team management concept that recognizes effective production practices, diagnoses inefficiencies in production and prescribes corrective action that will ensure maximum profitability and competitiveness through the optimum use of all farm and ranch resources."

The local IRM team is made up of Extension specialists, soil and water conservationists, veterinarian, ag lenders, allied industry representatives, producers, and other professionals who can help identify and analyze the efficient and inefficient aspects of an individual's farm or ranch operation.

Members of the team scrutinize each other's recommendations for improvement, making sure that steps to improve one aspect of the operation don't negatively affect another. This helps the producer keep recommendations in balance with the optimum use of available resources and provides the expertise needed to draft a total management plan.

The National Cattlemen's Association has been involved with the IRM effort since the late 1970's when the Forum For Animal Agriculture identified IRM as a program priority for USDA agencies. In 1984 NCA established an IRM subcommittee to facilitate producer awareness of the IRM concept, priority planning and program development. In 1986, NCA helped organize the beef industry's National IRM Coordinating Committee, enabling all individuals interested in IRM to participate in coordination and implementation of future projects and programs. Both groups, represented by producers, Extension specialists, bovine practitioners, allied industry, and ag lenders are responsible for the continuing enthusiasm and growth in IRM programs.

II. Why do we need IRM?

NCA believes the socio-economic issues of the 1990's will continue to revolve around environment, food safety, animal health and care. To protect the future integrity of beef products, we must assure consumers, legislators and regulators, through significant science, that beef management practices are environmentally sound and socially acceptable. At the same time, we must assure our members and ag lenders that proposed new/improved management systems will yield beef products that are globally competitive.

NCA is convinced that IRM's interdisciplinary team approach to solving producer problems is desperately needed to enhance information sharing and

technology transfer among livestock producers.

We need IRM because:

1. At the local level, our county agents no longer have the time, resources and/or expertise to deal with all the complex issue facing today's livestock producer. However, they do have the contacts to assemble and effective local IRM team.
2. At the national level, the CSRS initiatives under LISA have identified few livestock projects/programs as priority. The LISA Regional Administrative Councils (after four years in existence) have not asked the livestock commodity organizations, whose members own a vast majority of the U.S. land mass and livestock population, to serve on the regional councils or participate in priority planning.

III. NCA's IRM Priorities

1. Develop a national data base on financial parameters of the cattle business that are consistent with the American Bankers Association Standardized Farm Financial Guidelines. (Completed 1991).
2. Develop a national database on measures of environmental management that will allow a data base user to identify environmental problems and suggested cost-effective corrective action before they get shut down or saddled with an environmental lien against their property.

IV. National IRM Needs:

1. to identify and IRM structure that will facilitate priority planning.
2. the development of a comprehensive research and education environmental management plan for livestock producers highlighting soil and water quality as impacted by grazing, feeding and manure management systems.
3. the establishment of an IRM funding structure supporting national, state and local programs.

**PORK INDUSTRY COMMENTS
THE NATIONAL INTEGRATED RESOURCE MANAGEMENT WORKSHOP
DECEMBER 1991**

Today's consumers expect more from the agricultural industry than an adequate food supply. Consumers are concerned about food safety, environmental quality, and animal well-being. They expect producers to be pro-active in finding solutions to these problems. That is what IRM brings to the table. This workshop should be dedicated to developing an IRM program that allows producers to find pro-active solutions to the challenges they face in their day-to-day operations.

An IRM program should work with existing organizations and institutions to find answers to the questions the public is raising. Research and demonstration-education should form the core of the IRM program. The demonstration portion of the IRM program should include on-the-farm research and education activities. In addition the Extension Service needs to be revamped and retrained in order to provide the services needed to deliver this kind of program. One issue that needs attention is the tenure problem. Tenure does not allow ES to change fast enough to meet the needs of a changing industry. This is just one challenge facing the Extension Service and the industry in making this program work.

There are many other challenges facing producers who want to integrate the research and education components of the sustainable agriculture title. The first challenge our industries face is introducing producers to the IRM concept. Some producers may use team approaches to problem solving and operation design. Others may do an economic analysis of various farm management options prior to implementation. Still others may consider how they can incorporate on-farm resources into an environmentally sound, sustainable agriculture program. Unfortunately, few producers are doing all of these things and others may not even think along these lines. Thus, if Extension is going to adopt and pursue a program to educate producers along these lines, the challenge appears to be finding a way to make programs attractive enough so that producers are receptive to this philosophy and are an active part of the IRM process.

To meet this challenge, we must begin incorporating references to IRM within our individual commodity organization environmental education and PQA education programs. Next we must identify, within these same forums, the Extension Service as a resource producers can use to design an integrated farm management plan. The Extension Service needs to help our producer education programs establish the principles of IRM with producers. From that point forward, Extension must play a greater role. Our organizations don't have the resources within local communities to pull together teams relevant to a producer's problems.

Once we establish the importance of this program, our individual organizations should pull together a committee of producers to develop and review commodity specific

problems and research proposals. The Cattlemen have had an IRM Committee as a subgroup of their Research Committee for years. A similar structure would serve other livestock organizations as well.

After producer priorities have been identified, a research proposal could then be developed through a collaborative effort with identified research institutions. The link with a research institution would help eliminate duplication of effort as well as tie basic university research closer to the farm. This link would also help fulfill the dictate to integrate information resources. Under this system, a state association could work with their state land grant institution or a national commodity group could work with a specific institution or a group of institutions to develop a project proposal. With this approach, state programs could operate alongside of programs with national significance.

One difficulty we have had in trying to define the IRM program is the lack of criteria for what an IRM project proposal should include. The criteria listed on the diagram is one suggestion for what would constitute a sound project proposal. These criteria offer the livestock industry a sound opportunity for working with the representatives of Chapter 1 - the BUBA Demonstration program (formerly LISA Demonstrations). The elements of University/USDA basic research, on-farm research, and project demonstration could all be fulfilled under the existing BUBA program. An IRM proposal could then be combined with a particular BUBA research project to complete the steps of team assembly/review, summary of results, and Extension/Industry education.

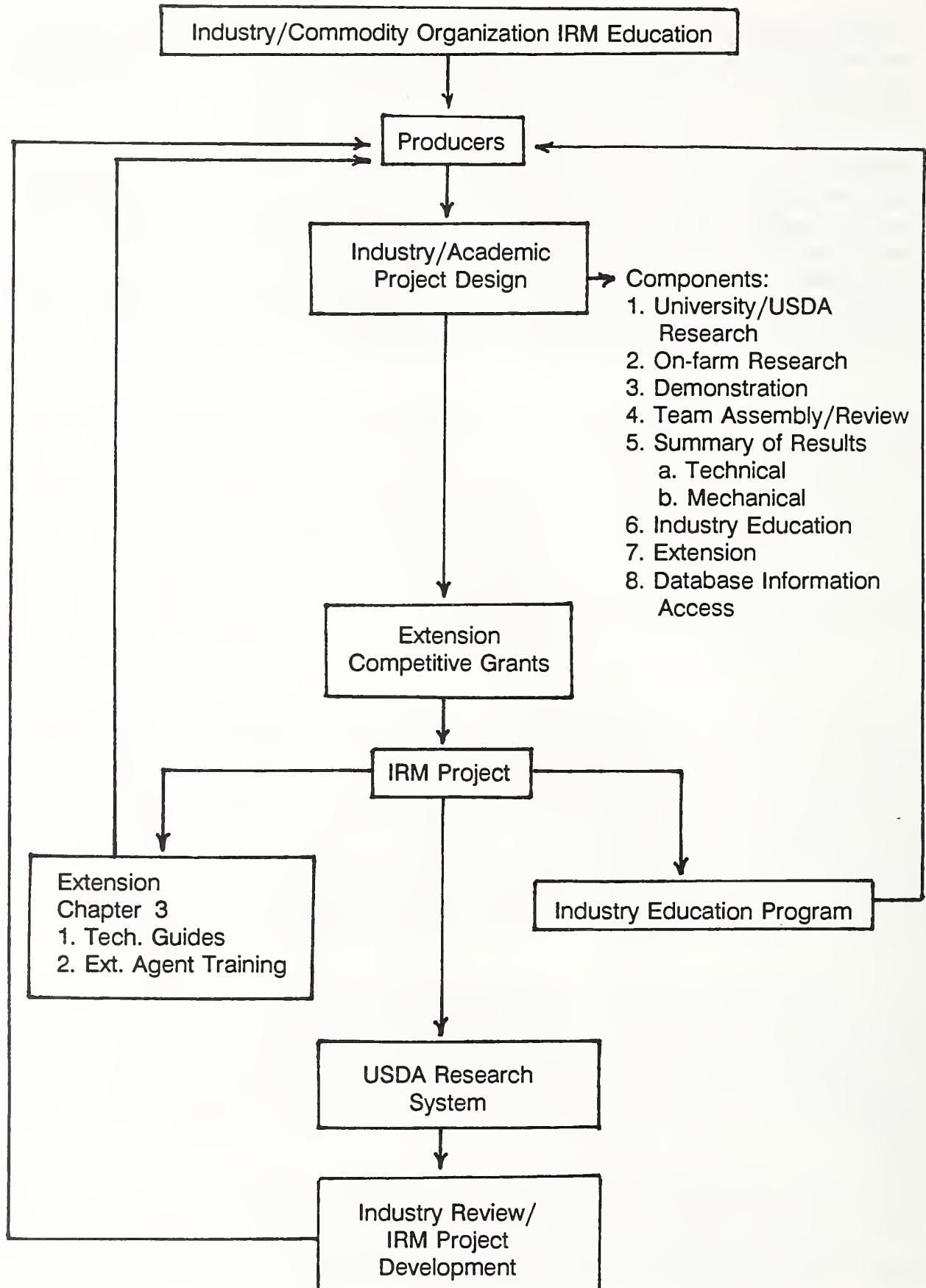
Following the completion of the IRM project, the results would be distributed to three different entities. First, as laid out in the original proposal, the results would be shared with state and local Extension. These results would help in developing and amending the technical guides called for within Chapter 3 of the Sustainable Title. Further, the information developed through the IRM project, both the information regarding the technical issue being researched and the mechanical methods used in the project (i.e.- how the team was assembled, what type of economic analysis was conducted, etc.) would be presented to Extension Agents throughout the country by means of the Training Program also required in Chapter 3.

Second, the information from individual projects would be distributed to industry organizations conducting significant producer education programs. The results of the projects conducted by various industry groups could then go into the planning and selection process for other industry groups. This requirement would help address shared technical problems, as well as providing other industry groups with ideas about problem solving methods.

Third, the information would be presented to the USDA research agencies. More precisely, the research results and problems encountered during the project that need to be resolved through additional basic research would be presented. This step serves a two-way function: 1. USDA awareness of on-farm integration needs will help

the USDA respond faster to the needs of agriculture; 2. Increased communication between USDA and groups submitting IRM proposals will provide the Department an opportunity for on-farm testing of current USDA research. This could also help speed the transfer of new technologies developed through USDA research programs.

The final element of this IRM concept would be a review of IRM projects and related USDA research by a joint livestock industry group. The Forum For Animal Agriculture currently fills this role and could continue to facilitate the review and transfer of USDA research information. Forum members could then convey USDA information and needs back to the producers who are developing new IRM project proposals. This final step completes the circle and ensures the integration of producers, researchers, and extension in a new sustainable agriculture program.



SID/ASI Integrated Resource Management Program

Paul Rodgers
Director, Producer Services

1. IRM Mission Statement:

Improvements in efficiency of production, processing and marketing are essential to make the U.S. sheep industry competitive in the global economy. Simultaneously, lamb and wool must be produced in a sustainable manner (economically viable, environmentally sound, and socially acceptable). As a result of this program, the sheep industry will be more globally competitive and the industry will play an expanded role in enhancing the quality of life for producers and communities.

To accomplish these goals, a producer driven, interdisciplinary, integrated-systems approach must be utilized in evaluating, and transferring, research based technology, and when applying problem solving techniques to our farms and ranches.

2. The Conceptual Framework of IRM:

IRM represents a process which can enhance the ability of agriculture to effectively deal with challenges and solve problems. In particular, the SID/ASI IRM program is designed and directed by producers to address the following issues facing the industry: global competitiveness, profitability, sustainable agricultural, natural resource utilization and animal health and well-being. The basic approach and organizational structure of IRM programs includes the following components:

- A. Industry and producer designed programs that deal with issues and problems facing producers within the framework of the goals of producers, their families and communities.
- B. A focus on specific issues or problems within commodities/enterprises, and/or optimization of performance of enterprises and ultimately an optimization of the performance of the whole farm or ranch system.
- C. An emphasis on establishing interdisciplinary, interagency and public/private sector teams to effectively deal with issues and problems.
- D. A plan for addressing the national, regional, state and local aspects and components of the program.

3. Sheep Enterprise Optimization Factors:

One of the first steps in solving problems or dealing with issues affecting a commodity/enterprise or whole farm/ranch system is the evaluation of the current status or situation. The same evaluation system is needed to effectively determine if management or other changes have improved the situation. Consequently, there is a need to develop standardized terminology and calculation procedures to effectively analyze the efficiency of the following components of the sheep enterprise and whole farm/ranch system: reproduction, production, forage production and natural resource utilization, marketing, financial performance and animal health and well-being.

4. Products of National and Regional Scope:

The following products produced as the result of national and/or regional activities will enable states and local IRM programs to effectively deal with issues and solve problems affecting producers, their families and communities.

Phase One Products

1. Standardized formats and publications on financial analysis of farm/ranch performance.
2. Standardized formats and publications on biological efficiency (reproductive and production).
3. Market analysis approaches for assessing competitiveness and opportunities at the local, regional, national and international level.
4. Coordinated publication of quantitative and qualitative measures relating to the preservation and sustainable use of natural resources.
5. Coordinated publication of measures of animal health and well-being.

Phase Two Products

1. Coordinated regional and national productions of curriculum type teaching materials, videotapes and visual materials to support complete regional, state and local educational programs in concert with the sheep industry.
2. Coordinated production of site specific, regional and national technology packages or systems.
3. Decision support systems that assist in whole farm/ranch planning as well as individual enterprise analysis.
4. Data bases to improve the efficiency of information distribution, access and utilization by sheep producers, extension staff, other agency staff and others in the public sector.

Phase Three Products

1. Coordinated regional conferences and workshops (satellite/curricula based or on-site) for producer, extension staff, other agency and public sector groups in decision-making approaches, procedures and related topics.
2. Develop national and regional networks for information and knowledge sharing utilizing systems such as the National Science Foundation Network or other electronic communication systems.

National Dairy Herd Improvement Association

December 10, 1991

NATIONAL INTEGRATED RESOURCE MANAGEMENT PLANNING WORKSHOP
December 11-12, 1991

Subject: NATIONAL DHIA'S VIEW OF OPPORTUNITIES TO IMPROVE DAIRY FARM
EFFICIENCY AND MILK QUALITY IN THE U.S. THROUGH THE IRM INITIATIVE

To: Workshop Attendees

The National Cooperative Dairy Herd Improvement Program (NCDHIP) is a cooperative program sponsored and operated jointly by the public and private sectors to provide timely and accurate information for herd management and data for research and education. NCDHIP is active in 49 states, plus Puerto Rico and the Virgin Islands.

The sponsors of NCDHIP are the National Dairy Herd Improvement Association, Inc., the United States Department of Agriculture-Agricultural Research Service and Extension Service, and the Cooperative Extension Service in each state. The operating arm of NCDHIP is the DHIA System which is comprised of National DHIA and 41 state and regional DHIs. National DHIA represents 56,000 dairy producers with 4.8 million cows. This system employs 2,500 people, operates 9 regional dairy records processing centers and 55 central milk analysis laboratories. Accuracy of procedures used in NCDHIP and the data and information emanating therefrom are regulated by National DHIA's Quality Certification Service. The role of USDA and Cooperative Extension is to provide research and education support to NCDHIP.

In recent years, research and education support of dairy producer needs has decreased significantly. This decrease in support has reduced the ability of the DHIA System to adopt current computer and information technology commensurate with the needs of the rapid technical advances in the U.S. dairy industry. The IRM initiative appears to present an ideal opportunity to reverse the decrease in support to commercial agricultural producers.

The needs of the DHIA System are especially acute in two major areas of rapidly developing technology:

- Implementation of on-farm (personal) computer technology to decrease the cost and disruption caused by traditional data collection protocols, and to provide real-time management information for rapid decision-making by dairy producers.
- Implementation of decision aids for herds of varying sizes and levels of automation to facilitate mid- and long-term planning.

continued...



The advantages of improved capabilities on the part of the DHIA System in these two areas of technology are several-fold:

- The dairy industries of many other countries, especially the EEC countries, are adopting new technology at a more rapid rate than is the U.S. This is due in large part to the greater government support received by the dairy industries of those countries. This raises concern about the long-term competitive position of the U.S. dairy industry.
- Production efficiency must continue to improve in the dairy industry if the U.S. is to have an economically viable industry in the long-term. Improvement in production efficiency well-serves most of the current social and environmental agendas.
- Dairy farming is almost exclusively a family-oriented business. The economic survival of a major portion of the present dairy farms will depend largely on their ability to become more efficient.
- In many parts of the country with high concentrations of dairy farms, the future agricultural opportunities provided to rural youth are dependent in a large part on the long-term economic viability of the dairy industry of the region.
- Dairy farms that are more efficient in their production practices will optimize the utilization of natural resources and minimize disruption to the local ecosystem.
- An increasing number of dairy producers are realizing they cannot attain these previous goals nor maintain high standards of milk quality without the help of the management information that is provided by NCDHIP. Evidence of this fact is the net increase in enrollment in NCDHIP in the past few years in the face of a declining total dairy cow population.

The National DHIA and the entire DHIA System strongly support the national IRM initiative. We encourage the public agencies associated with this initiative to continue to solicit constructive feedback from those of us working on a day-by-day basis with US agricultural producers. The results of a strong cooperative effort will serve the consuming public well.■■■

**National Milk Producers Federation
John B. Adams**

**Milk Safety and Animal Health
December 11, 1991**

Integrated Resource Management (IRM) should be viewed by all segments of animal agriculture as a huge umbrella under which we can all fit and survive - i.e., work together to solve common problems at the producer level. So, IRM should be producer driven. It should also, however, involve the researcher, supplier, extension agent and consumer to solve the complex problems which inhibit profitability, social acceptability and environmental compatibility.

IRM should be viewed as no one single approach, but an array of approaches which are directed at solving problems common to animal agriculture producers, -i.e., waste management, insect and disease control, biosecurity, nutrient management, financial planning, etc.

IRM should be viewed as an array of problem solving approaches which optimally utilize natural, human and man-made resources so as to enable the producer to provide products which enhance consumer safety, nutrition and environmental compatibility.

Finally, IRM should be viewed as a philosophy which promotes the long-term overall best interests of animal agriculture. Available resources should be constantly integrated, focused and coordinated so each species benefits from each others' advances. Knowledge and information should be shared as should the responsibility for obtaining needed resources to conduct necessary research and extension to optimize implementation of IRM.

In its totality, IRM should be viewed as the most rational, direct means to solve problems for the mutual benefit of animal agriculture and society.

NATIONAL TURKEY FEDERATION
Joseph M. Pocius

National Integrated Resource Management Workshop
December 11, 1991

Integrated resource management is a system which the turkey industry has been practicing in one form or another for many years. The industry by its nature is vertically integrated allowing the various facets of breeding, hatching, growing, processing, and manufacturing to interplay in a highly efficient manner.

The industry has been very successful in integrating the resources under its direct control. However, we do not have systems to be used in integrating resources outside of our direct control. This is what we are hoping the provisions of IRM in the farm bill will address.

Like many other industries, the turkey industry is continually under pressure from local interest groups which threaten environmental liability. These threats often result in zoning laws which severely limit the activities of the industry. It is interesting to note that while the accusations directed at industry need not always be scientifically based, experience has shown that our answer had better be scientifically defensible. The charges, which include groundwater pollution, surface water runoff contamination, and air pollution via micro aerosols and smells from grow out facilities can often be defended against only through the coordinated efforts of various scientific disciplines. For instance, geologists must be consulted for ground water filtering properties and soil residue retentions; meteorological charts must be used to determine air flow patterns during various times of the year; toxicological advice must be received to determine anticipated residue reactions - by both plants and animals; biological chemists must be hired to determine the environmental/biological half-life of suspected pollutants.

Few laboratories are equipped with the manpower and facilities to address such issues. Nonetheless, successfully addressing such issues will determine the long term viability and competitiveness of our industry.

In the interest of time, I will only address one specific issue of interest to the turkey industry. There is a skeletal disease found in market turkeys called osteomyelitus. It occurs as an inflammation of the leg joints containing a pocket of pustule of various microorganisms. Depending on how far the disease has progressed, the microorganisms may be found in the surrounding tissue. Diagnosis of synovitus, another inflammatory condition of the leg joints which does not effect the edible muscle, is often confused as OM. The indicator used during inspection to identify OM is the presence of a green liver. This indicator has been shown to be less than 50% accurate in identifying the disease. Incorrect diagnosis of the disease is estimated to cost the industry approximately \$10M/year.

The issues to be answered here are several fold: 1.) How can OM be correctly identified to prevent or reduce the yearly losses to the industry? Identification can be through a better primary criteria or through determination of a confirming secondary criteria. 2.) Secondly, how can the condition be predicted, and therefore, prevented from occurring?

This is obviously a veterinary project since it involves a major farm species but it also calls for the involvement of many other disciplines. For instance, turkeys have been bred to grow greater amounts of breast meat which may be effecting their gait, or the way some birds walk, thus effecting their leg joints. This calls for the integrated efforts of both geneticists and physiologists to determine if in fact the way a turkey walks does result in infected joints and if it does, is it related to a specific genetic trait which can be bred out; or can an additional trait be bred in to accommodate the birds health?

The question of microorganisms in internal tissues suggests some sort of invasiveness. How are these tissues inoculated and why is the inoculation localized? Why are only certain organisms found and what environmental factors in the bone and surrounding tissue allow them to survive? Intimate knowledge of both pathological and non-pathological organisms is required from a micro standpoint to answer these questions.

Finally, how can the disease diagnosis be improved in a non-destructive manner? Again, this is a veterinary issue from an inspection standpoint. However, spectral radiometry as an on-line inspection tool has shown great promise for identifying disease conditions of poultry. With further development it may be applied to the identification of osteomyelitus.

Clearly then an integrated approach is necessary to address and resolve the issues involved with this single condition. It will take the efforts of veterinarians, physiologists, geneticists, microbiologists, and spectral chemists.

There are very good laboratory facilities currently available which house equipment and personnel who are versed in one or more of the required disciplines. However, we know of no single facility which can address all of the issues at one location. Several investigators, each a specialist in their field, and each at a facility housing the assets necessary to complete their portion of the project will be required. The turkey industry does not have the wherewithal or the funds to independently support such work. Therefore, we look to the various facilities supported by public funds to help us. However, as discussed, there must necessarily be a process which will integrate the efforts of all individuals involved to prevent duplication of effort and to coordinate the project to a successful conclusion.

NORTH CAROLINA SWINE WASTE NUTRIENT MANAGEMENT PROGRAM

North Carolina produces in excess of five million hogs per year. Consolidation and expansion of the swine industry have allowed it to produce pork more efficiently and profitably. However, industry changes have also generated larger amounts of waste materials on relatively small land areas. Managing and utilizing these resources have presented the swine industry with new challenges and responsibilities, most notably the need to operate in an environmentally sound manner. Concerns about water quality, odor, noise, insects and rodents, and farm worker health have been expressed by a growing number of individuals and special interest groups.

The success of the North Carolina Swine Waste Nutrient Management Program is due to a number of key components and characteristics. First, the program is research-based. Over the years, our researchers have focused on addressing waste management needs pertinent to our livestock industries. These efforts have become more interdisciplinary as they attempt to integrate the components into an environmentally sound nutrient management system. They have focused on using manure and other byproduct nutrients as resources rather than liabilities.

Second, the program can be described as a "team effort," from the standpoint of providing financial support for research and education as well as availability of expertise and manpower to carry out the program. Local, state, and federal governments, research and extension, agricultural agencies, agribusinesses, lending institutions, industry groups and farmers all have a part in making the program a success.

Third, our extension program has expanded its audience for waste management programs. Traditionally, we focused on providing technical information to farmers to help them manage nutrients in waste products. The emphasis in many cases has changed from specific components of waste management and utilization to developing swine waste nutrient management systems. Programs on the environmental impacts of confined livestock production have been provided to county commissioners and the general public as well as to farmers. Extension is involved in discussions with the Division of Environmental Management, commodity organizations, producers and others to build a consensus on the components and implementation strategies for revised regulations dealing with waste management systems for confined livestock feeding operations.

Finally, the North Carolina Ag Cost Share Program has provided substantial expertise and incentives for livestock producers to use management practices to enhance and protect water quality. The program, implemented in 1984 in three nutrient sensitive watersheds, went state-wide three years ago. Over the life of the program, \$13.56 million have been used to cost-share with farmers the expenses of installing practices to manage and utilize animal wastes.

THE DEVELOPMENT OF AN INTEGRATED RESOURCE MANAGEMENT PROGRAM FOR THE AMERICAN SHEEP INDUSTRY

K.A. Ringwall

Introduction

Currently, the United States sheep industry is at a critical crossroad. Depressed prices for lamb and wool have range and farm flock producers under close scrutiny from agricultural financial supporters. A multitude of issues including production efficiencies, consumer demand, marketing constraints, predator control, health and government programs influence the daily decisions that sheep producers are required to make. Simultaneously, state resource programs are not being maintained at levels that guarantee quality standards consistent with user expectations and producer needs. This scenario, has sheep producers across the country looking for alternative managerial protocols that are capable of integrating the various forces affecting each individual operation.

In response, the American Sheep Industry has formed a Sheep Industry Development/American Sheep Industry (SID/ASI) National Sheep Integrated Resource Management Coordinating (SIRM) committee. The function of this committee is to assure the ongoing availability of current expertise to sheep producers through integrated resource management programs. These programs are designed to prepare lamb and wool growers to offer a product that is above breakeven costs and in balance with the local ecology.

An initial step in lowering costs of production is to clearly determine current costs and make comparisons to alternate production systems. Before such an analysis can be done, a standardized total farm and sheep enterprise performance procedure needs to be developed for comparative analysis between production years, different producers, production regions and various sheep production systems. This standardized data base analysis and calculation procedure will greatly enhance total educational efforts to improve lamb and wool production and marketing.

The SIRM committee decided the first step in solving problems or dealing with issues affecting a commodity/enterprise or whole farm/ranch system is the evaluation of the current status or situation. Subsequently, the same evaluation system is needed to effectively determine if management or other changes have improved the situation. Therefore, the SIRM committee is developing initial guidelines for economic and production evaluation in six general areas:

1. Reproductive efficiency
2. Production efficiency
3. Forage production and natural resource utilization
4. Lamb and wool marketing
5. Financial performance
6. Animal health and well-being

The current IRM approach will first address financial, reproductive and production efficiency.

As the IRM concept grows within the sheep industry, the SIRM coordinating committee will explore ways of implementing flexible educational concepts that are serviceable and cost effective through the Extension Service. The concept of regional Small Ruminant Business Centers will be encouraged. These centers will capitalize on the interrelationships of research and extension faculties within participating states and provide the force to implement county and regional programs for the expressed purpose of integrating current, emerging and potential resources into the sheep enterprise.

SIRM Objectives

The initial objective is to develop a set of production and economic standards for the sheep industry that confirm to those products identified by the SIRM committee. In order to help ensure that producer's managerial decisions are based on adequate knowledge of production records and financial records of costs and returns, the SIRM committee is developing:

1. A set of standardized production and financial records and reporting publications necessary for evaluating management decisions.
2. Uniform guidelines for cost and production measures so that records and economic evaluation for one producers (state or region) are consistent with other producers (states or regions).
3. A system to integrate those records to assist producers in evaluating the cost of alternative management systems and/or production increasing technologies.

In the future, the SIRM committee will provide support to expand sheep opportunities and assure continued development of a sheep industry within commercial agriculture. The final IRM network will include a complete educational network to service the needs of a sheep enterprise at all stages of development through small ruminant business centers. These centers would support technology transfer through the coordination of a multi-state interdisciplinary sheep management (IRM) team to aid the sheep industry in becoming a permanent part of the commercial agricultural industry.

SIRM Methods and Approaches

Colorado State University is coordinating developmental SIRM activities for the SIRM committee set up by SID/ASI. Several states are involved in the developmental phases in the following areas:

1. Standardized calculation formats and reporting publications on biological efficiency and financial analysis of farm/ranch performance.
 - a. Colorado, Iowa and Virginia are reviewing and adapting existing National Cattleman's IRM formats in regards to sheep biological efficiency and financial analysis formats. Colorado will prepare a report (white paper) to the SIRM committee for acceptance of proposed formats by December 31, 1991. The financial and production standards will be developed using the Farm Financial Standards Task Force format.
 - b. The proposed SIRM formats will be distributed to Colorado, Iowa, Virginia, Illinois, North Dakota and Texas to test demonstration farm/ranch data. Colorado will modify and refine the biological efficiency and financial analysis formats based on the six state review and submit a final report back to the SIRM committee for final acceptance by May 1992.

Producer input is critical during production and economic standards development to insure that producers are capable of collecting information requested and that producers feel this information is important for their decision-making process. The use of current state data bases from several extensive (range) and intensive (farm flock) SIRM cooperators will allow a comprehensive survey and testing of economic and production measures. The economic and production measures that are in broad-based use within intensive and extensive operations, and useful as accurate farm/ranch decision information, will be identified.

 - c. Iowa, Colorado and Illinois will review and adapt current sheep enterprise and production data recording systems to meet developed standards of financial and biological efficiency. Colorado will report back to the SIRM committee for final acceptance by September 1992.- 2. Develop integrated cost/return analyses for the sheep enterprise.
 - a. Colorado, Virginia, North Dakota, Iowa and California will combine sheep performance records with business management records for careful evaluation of the interactions and economics of production and resource utilization. Colorado will report back to the SIRM committee with a recommendation by December 1992.

This activity will determine how functionally acceptable the new economic efficiency standards are with producer groups. Cooperating farms and ranches will provide original input into the standardized financial records, production/reproduction records and economic efficiency standards. Producers (state and regionally) will be extensively surveyed for input into

the functional value of the efficiency standards. The objective of economic efficiency standards will, ultimately, provide a sheep producer the opportunity of making an accurate economic evaluation of alternative management systems, strategies and technological application within the operation.

The SIRM committee supports a complete educational network to assure implementation of developed IRM concepts within sheep enterprises. Regional small ruminant business centers will be established by the SIRM committee and will support a curriculum based program for the entry level producer, supply current biological technology required for advanced sheep production, support an integrated resource management program to maintain and expand sheep production and develop and organize data bases for enhanced decision support and expert system utilization.

Each center will maintain a professional multi-state IRM team which has the primary responsibility to set up and educate county or regional IRM teams within the participating states. The small ruminant business centers would host all county and regional teams for workshops that will update individual team members on current sheep technology as well as how to implement such technologies. Additional continuing education will be offered on emerging or potential issues as needed. These retreats would include classroom as well as lab instruction to assure that county and regional IRM teams understand the physiology and ethology of the domestic sheep as new emerging technologies unfold.

The function of county or regional teams is support and development of the sheep industry. These teams will be charged with the mission to:

- 1.) Design and implement a recruitment program that will successfully encourage agricultural producers to consider improving or implementing a sheep enterprise within the farm or ranch operation.
- 2.) Work individually and in small groups with potential and current sheep producers to provide technical knowledge and skills concerning meat and fiber production.
- 3.) Establish and evaluate progress toward family and personal goals relating to the meat and fiber enterprise.
- 4.) Provide an opportunity for meat and fiber enterprise analysis instruction.
- 5.) Obtain and screen a detailed list of resources, finances and available labor from each producer and develop individual feasibility plans.
- 6.) Encourage each producer to enroll in a suitable sheep performance testing and herd evaluation program.
- 7.) Determine initial and expansion sheep numbers for each producer based on a feasibility plan and production records.
- 8.) Advise the state extension services in designing a year-round program of large group, small group and individual instruction based upon the needs of sheep producers in the geographic area being served

When completed, small ruminant business centers would accumulate, interpret and disseminate pertinent sheep knowledge by utilizing computerized management information and retrieval database systems. Through these centers, county extension personnel would have equal opportunities to disseminate the latest technology available and multi-state IRM teams would integrate current, emerging and potential resources into the on-going sheep industry

NATIONAL DAIRY DATABASE AND DAIRY DECISION SUPPORT SYSTEMS EXECUTIVE SUMMARY

Decisions concerning a dairy operation can no longer be made solely on the basis of tradition or economic impact. Rather the basis for decisions must simultaneously consider various goals and constraints including

- operator goals
- economic viability
- environmental impact
- social acceptance

The complexity of these decisions demonstrate the necessity that decision aids be developed that aid the dairy manager in making informed decisions consistent with the often conflicting external requirements.

Development of such tools first requires development of a sound decision-based conceptual framework that will embrace contributions from various agencies, permit full integration of information, and still remain focused on specific decisions that must be made when solving problems on dairy farms and ranches.

The conceptual framework used in the dairy area contains three components. The first is a decision array that serves as the basis of all development efforts. Besides identifying high priority areas in need of development, this array also serves to

- define the breadth of decisions
- identify the detail of a specific decision
- describe the relationships that enable integration

The second component of the conceptual framework addresses the information required to make decisions. Specifically, it addresses the information needed to establish goals, diagnose problems and compare alternative solutions by identifying

- What can be?
- What should be?
- What is?
- What's wrong?
- What if?

The final component is an integrated collection of resources that contain the expertise required for decision making. These resources can take various forms including spreadsheets, graphs, databases, expert systems, equations, pictures, schematics, audio cassettes, videos, and slide sets. Integration of these resources not only enable a more extensive approach to problem solving and decision making than traditionally has been possible, but also serve to educate the user and provide support for implementation of recommended solutions.

An Overview of Extension Poultry Programs

Richard Reynells¹
USDA-Extension Service
December 11 - 12, 1992

CURRENT SITUATION

The poultry industry is already globally competitive, especially if you disregard the subsidies some countries provide their poultry products. But will we be competitive in the future? How can an industry be globally competitive without trained personnel? We first need competent personnel to work in the system and therefore we need a strong university system--of research, teaching and Extension.

For the last several years, the concept of a poultry system has been presented as the only long-term solution to our many challenges. In an idealized poultry system, the research, teaching and Extension faculty actually work together as a team to build a strong department; and the industry, government and university personnel work as a team to create a strong and diversified industry that is responsive to consumer needs and demands. They work together to build a recruiting program to strengthen the university system and pool of qualified personnel for the system. This concept does not reduce competitiveness, it is meant to enhance our ability to solve problems for the mutual benefit of the industries (and thus society). The animal industries should adopt the same concept: that of a food animal production system.

The current proposed program through the Forum for Animal Agriculture is one opportunity to strengthen our animal production system. Other reasons to pursue a unified approach to problem solving are the need for agricultural literacy of consumers, the real and perceived problems identified by animal welfare/rights advocates, commercial advocates for food safety, and commercial advocates of environmental quality. To be effective, efforts of animal agriculturists must be more than a facade, which may be manipulated by greed and the self-serving interests of certain individuals or groups.

¹These comments are strictly the personal opinion of the author, and may or may not reflect USDA or ES position or policy. The comments likewise should not be construed as position or policy of any poultry commodity group.

EXTENSION POULTRY PROGRAMS NEEDED TO BE GLOBALLY COMPETITIVE

What is required other than to optimize the input:output ratio, to increase marketing abilities and to maintain the availability of high quality products? We can list all sorts of impressive programs that would help the industry reach these goals, but basic problems in our educational system must be solved if poultry or other commodity areas are to be successful internationally or even locally.

To be competitive we need to have an adequate number of trained personnel. I told a person in the animal rights movement that he did not have to worry about our system because the way we are headed it will be drastically altered in 30 to 50 years (their short-term time frame), and we are not supplying the trained personnel our system requires to maintain itself. His comment was the animal industries can just hire personnel from other countries if our system fails.

The first requirement of Extension poultry programs is to have reasonable administrative support. There is concern regarding the administrative support for production programs, specifically poultry. The problem is not in just one or two states, and is not related to personnel that would be considered non-productive. The budget crisis is used for the current excuse, but the situation existed prior to the current problems.

What kind of quality or quantity program can you develop with \$800 to \$1,200 travel for the year? Some specialists pay for professional improvement (e.g., PSA Annual Meeting; SEPA or other trade shows) out of their personal bank account. How is Extension going to assist the industry to be competitive globally if there is an inadequate number of specialists or other scientists in the university system, many of whom have inadequate travel funds?

Why should the dairy or swine industry care about poultry, or vice versa? Because, like it or not, all of animal agriculture is dependent to some degree on each other. This is especially true today in dealings with animal rightists/welfarists, environmentalists, or others attempting to drastically modify our system to fit their philosophical requirements.

To be effective, there has to be enough personnel in each state, or accessible to the industries, who have the qualifications required by industry. Few, if any, in the audience or anywhere else could have the depth of expertise required by the industry in various processing, nutrition, hatchery, disease, or other production areas. Yet a specialist is hired to work in all phases of the industry, have or help with youth programs, and fill out an increasing number of reports for Extension. Then at some universities it is very difficult for these people to obtain tenure and promotion.

EXAMPLES OF SPECIFIC EXTENSION POULTRY PROGRAMS THAT CONTRIBUTE TO GLOBAL COMPETITIVENESS

1. US EPA, USDA/SCS, TVA LIAISON WITH SOUTHEASTERN POULTRY AND EGG ASSOCIATION

As a pilot project to last for at least three years, a water quality liaison was hired by the Southeastern Poultry and Egg Association, the USDA/SCS, US EPA, and TVA. The person will assist the industry in research, keeping current regarding water quality regulations, and assist the government agencies and industry find ways to cooperate in maintaining water quality. The project was formalized earlier in 1991. Extension specialists and Water Quality coordinators in the states affected by this program are working on this project on an individual basis.

2. NATIONAL POULTRY WASTE MANAGEMENT SYMPOSIA

National Poultry Waste Management Symposium of 1988, 1990 and scheduled for 1992, plus the 1989 Clean Water Act Workshop. These programs provided technical information, an opportunity for regulators and personnel in the universities and the industries to exchange viewpoints and to establish relationships, and created an increased awareness of the water quality situation faced by the industry.

3. NUTRIENT MANAGEMENT AND CARCASS DISPOSAL

Delmarva (the Eastern Shore of Virginia, Maryland, and Delaware) and Pennsylvania have excellent nutrient management programs and cooperate with the Chesapeake Bay clean-up and monitoring programs. Maryland and Delaware initiated work in the area of dead bird composting, which has been adopted nationwide as a means of effectively reducing contamination of ground and surface waters. The technique is directly applicable to disposal of the young dead of other species. Georgia has developed techniques for the fermentation of carcasses of larger species. Alabama, North Carolina, and California have made significant contributions to differing aspects of waste management.

4. RECRUITMENT AND YOUTH PROGRAMS

Extension personnel in Texas work as part of the Poultry Science Department team in the area of recruiting. Personnel in research and teaching reciprocate by assisting in 4-H programs and other Extension functions. They now have 117 students in the department. The 4-H and other youth programs are important to the recruiting efforts of the poultry department. PSA Recruitment Video-tape project developed two videos, one for counselors and one for high school or college students.

Poultry specialists in several states raise funds and provide the technical expertise and management of the National 4-H Poultry and Egg Conference. They are now working on a \$2M Endowment Project to ensure these programs are continued.

5. REGIONAL PROGRAMMING

Regional programming efforts are an attempt to compensate for an inadequate number of state personnel. One example is the Mid-Atlantic Cooperative Extension Poultry Health and Management Unit (MACE). MACE is a regional approach to bio-security for the poultry industry. Management specialists and veterinarians from MD, DE, PA, VA, NY, NJ, WV, DC cooperate to produce publications and an annual regional meeting for the Mid-Atlantic poultry system.

Specialists in the Northeast and those in the North Central regions cooperate to publish Extension newsletters. There are some cross regional programming efforts in the southern states (WV, VA, NC, SC). There are several workshops and other programs being conducted by specialists in the five states of MI, OH, KY, IN, IL, which also cuts across two regions.

6. ANIMAL WASTE MANAGEMENT WORKSHOP

National Livestock, Poultry and Aquaculture Waste Management Workshop, held in Kansas City during July of 1991. This program accomplished two important things: by being open to all commodity groups it facilitated a multi-disciplinary approach to waste management; the program attempted to define educational, technical assistance and research requirements of these groups in their efforts to maintain water quality.

7. POULTRY FTE'S

I extracted FTE information from the PSA Resource List for the PSA Ad Hoc committee to investigate the Status of Poultry Science in North America. I estimated that in the US there are 88 Poultry FTE's in Extension, with 103 FTE's total that work with some aspect of poultry; the research FTE's are 145 in poultry or animal science departments and 178 overall; the teaching figures are 61 and 78 total FTE's.

If Extension or the university system in your state is not contributing to the management abilities of all your farmers, does anyone ask "why"? Does anyone discuss the situation with any and all appropriate university and state officials? It is important to remember that discussions should praise efforts as appropriate. If there is not an active advisory board for the department, why not?

EXECUTIVE SUMMARY

RESEARCH AND EDUCATIONAL NEEDS AND APPROACHES FOR AQUACULTURE

Gary Jensen, ES-USDA National Program Leader for Aquaculture

Aquaculture is a specialized form of animal aquaculture. It involves the cultivation of aquatic animals and plants under controlled, managed conditions. Aquatic products are diverse in form and use and include food fishes, bait fishes, ornamental fishes, molluscs, crustaceans, alligators and aquatic plants. The growing environment ranges from sea water to fresh water using a variety of culture systems; earthen ponds, floating net-pens, water flow-through raceways, closed-recirculation tanks and other specially designed structures. Farm-gate value of industry products is expected to reach near \$1 billion in 1991.

Compared to traditional agricultural commodities, aquaculture is a newcomer that offers unique challenges because of the integration of water and land resource management and the wide variety of commercial species grown under animal feedlot conditions in many cases. Because of its uniqueness, many State and Federal Agencies have difficulty addressing the diverse needs of the aquaculture industry.

Two Federal operational structures exist that address industry needs. The Joint Subcommittee on Aquaculture is a statutory committee under the Federal Coordinating Council on Science, Engineering and Technology in the Office of the Science Advisor to the President. Its mission is to serve as a coordinating group to increase the overall effectiveness of Federal programs in aquaculture. Currently, 23 Federal Departments and their Agencies are represented. To address specific issues of National importance, Working Groups are established with strong participation from industry. Two current initiatives include Water Quality/Effluents and Quality Assurance.

The Regional Aquaculture Center program consists of five administrative centers with FY 92 funding of \$4 million directed to industry development and needs through collaborative research and Extension education projects. The program is unique because funding priorities for projects are determined by an Industry Advisory Council and Technical Committee composed of aquaculture research and Extension scientists. Programs leverage available resources to address multi-state problems that no single institution can resolve effectively and include an Extension component to translate and disseminate project findings to industry groups. Presently, more than 50 projects have been funded to support development of the U. S. aquaculture industry. The Centers have created Regional research and Extension networks that have included virtually every institution and Agency with expertise in aquaculture in addition to a National network of Extension contacts and multidisciplinary project teams. Issues of National scope are coordinated by interregional initiatives.

An Overview of Beef Cattle IRM Programs
Ed Duren
University of Idaho

The original incentive for IRM was to accelerate the transfer and early adoption of beef production technology to improve reproductive efficiency of the nation's cow herds. At the time, it required from 20 - 25 years for a new technology to be introduced and adopted on a ranch. This may be a reality in itself, because at this point in time it has been 16 years since the IRM concept was identified.

If one is to analyze the concept of IRM and to implement a program, integration must occur in two very distinct areas; i.e.:

1. Integration of technology
2. Integration of people

Integration of Technology

The integration of technology is relatively easily accomplished at the ranch level or effectively demonstrated within a community at a county Cooperative Extension educational program level provided it addresses a specific problem recognized by the ranch owner/manager and/or the community.

Hands-on type ranch demonstrations will produce visible results which will either enhance early adoption of an appropriate technology or totally destroy the application of the technology. The ripple effect of the result-type demonstration is very rapid within the community because it can be readily observed on the cooperating ranch(s).

Integration of People

By-in-large, the people process associated with integration is far more important than the integration of technology. IRM remains only in concept until people become involved.

People establish a program through the process of planning, strategy selection, implementation, and evaluation as goals and objectives are established and reached.

The bottom line: Business is not "as usual." IRM requires a different mindset. IRM is not a program, rather it is a concept. It is an entire way you do business; i.e., a total system to problem-solving.

IRM can and does become a program only when you begin to integrate technology and people. An IRM-type program is a plan or a system under which action is taken by people toward a goal. This plan should remain simple with all the players truly informed.

SCIENTIFIC PEER REVIEW OF COMPETITIVE RESEARCH PROPOSALS

The USDA-National Research Initiative Competitive Grants Program (NRICGP) solicitation which announces guidelines for each Program of the NRICGP is published in the Federal Register early in each fiscal year. Proposals for such awards may be submitted by any state agricultural experiment station, college, university, other research institution or organization, Federal agency, private organization, corporation, or individual scientist in the United States.

Peer review of the proposals submitted serves to provide the best possible scientific advice before expenditure of Federal funds. Peer review is coordinated by a Program Director, and NRICGP scientist who is responsible for overseeing the review process and for providing assistance and advice to the Panel Manager. A Program Director also acts for the Program in the absence of the Panel Manager or when a Panel Manager cannot participate in the review process because of a conflict of interest. The Panel Manager is a scientist who is widely recognized by the scientific community for research contributions and who is currently engaged in research in a scientific discipline(s) central to the Program's mission. The Panel Manager is appointed, on a part-time basis, to a one year term. The Panel Manager is responsible, in consultation with the Chief Scientist of the NRICGP and the Program Director, for selection of panel members with the necessary scientific expertise, review experience, and breadth of knowledge. Several panel members review each proposal in depth and present their critical assessments in writing. Written reviews are also solicited from the scientific community on and ad hoc basis. Proposals are then reviewed, discussed and ranked in the panel meeting which is chaired by the Panel Manager. The Program recommendation for funding, based on the ranking and advice of the Panel, is then presented to the Chief Scientist who recommends the awards.

Conflict of Interest: Reviewers, panelists, panel managers and other members of the program or office staff do not participate in any aspect of review or evaluation of a proposal: if there is any institutional* affiliation with or financial interest in the proposal; if there is any relationship, such as that of thesis or postdoctoral advisor or advisee, within the past five years with any scientist associated with the submitted proposal; if there has been, within the past five years, or there is planned any scientific collaboration with any investigator(s) submitting the proposal; if there is co-authorship on a research publication within the past five years with any relationship as a paid consultant to the investigator(s) or institution(s) involved, or if, for the potential peer review participant, there has been or will be gain or benefit derived from funding of the project proposed. Whether the conflict is actual or perceived, no potential peer review participant (whether Chief Scientist, program director, panel manager, panelist, or ad hoc reviewer) takes part in or is present during any aspect of review or evaluation of a proposal with which there is a conflict.

*At the state level, institutions in conflict are those as defined by the NIH guidelines. As of 18 April 1991, Agricultural Research Service and Forest Service scientists are in institutional conflict solely with proposals from their own Region/Station.

SUSTAINABLE AGRICULTURE RESEARCH AND EDUCATION PROGRAM

**G.W. Bird, Program Director
USDA/CSRS/SPPS**

The Sustainable Agriculture Research and Education Program is authorized under Subtitle B of Title XVI of the Food, Agriculture, Conservation and Trade Act of 1990. The Act defines Sustainable Agriculture as an integrated system of plant and animal production practices having a site-specific application that will, over the long-term satisfy human food and fiber needs; enhance environmental quality and the natural resource base upon which the agriculture economy depends; make the most efficient use on non-renewable resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm/ranch operations; and enhance the quality of life for farmers/ranchers and society as a whole (Section 1603).

The Secretary of Agriculture is responsible for administration of the Sustainable Agriculture Research and Education Program through the Cooperative State Research Service and Extension Service and other appropriate agencies (Fig. 1). A National Sustainable Agriculture Advisory Council, a minimum of four Regional Administrative Councils and selected regional host institutions are used for the implementation of Subtitle B. The National Sustainable Agriculture Advisory Council and Regional Administrative Councils include farmer, non-profit organization, agribusiness, government and educational institution representatives.

As mandated by the Regional Administrative Councils, Regional Coordinators are responsible for implementation of the regional programs through regional host institutions, Technical Review Committees are appointed by each Regional Administrative Council for specific tasks.

An Annual Report on the Sustainable Agriculture Research and Education Program is submitted annually by April 1, to the Committee on Agriculture of the House of Representative, the Committee on Agriculture, Nutrition, and Forestry of the Senate and the National Sustainable Agriculture Advisory Council. The report includes results of the program; summary of data collected by the projects; recommendations for new basic or applied research; number, length and type of projects proposed, funded and implemented by each region; and the national and regional economic, social and environmental implications of the adoption of practices developed under Subtitle B.

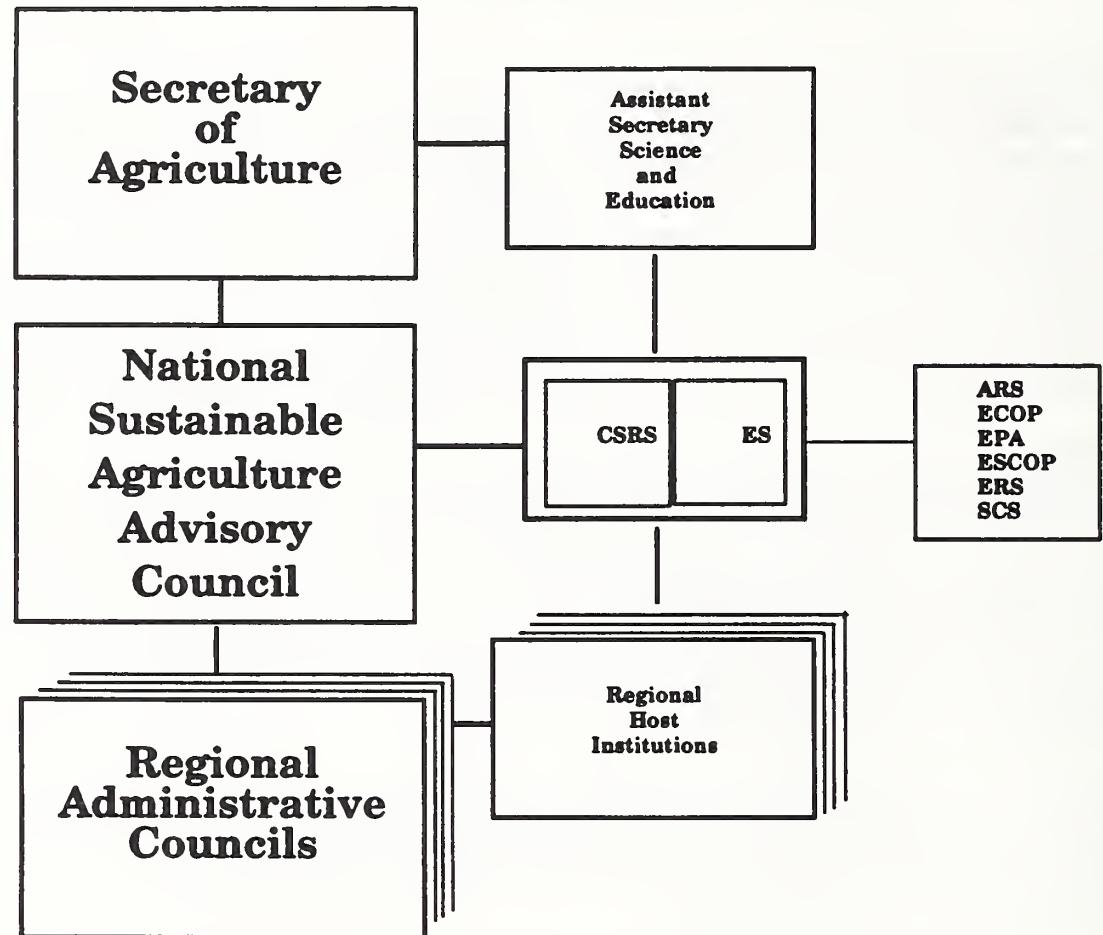


Figure 2. Sustainable Agriculture Research and Education Program Administration

THE NATIONAL RESIDUE AVOIDANCE PROGRAM (RAP) MODEL

1982 - 1985

The National Residue Avoidance Program was funded from 1982 to 1985. Funding was mainly pass-through funds from the USDA-Food Safety and Inspection Service (FSIS) with some additional funds from the Extension Service. These funds were appropriated to FSIS by congress for educational program development. The amount of funds available in total was several million dollars.

The RAP model focused decision-making at the National level and assured coordination across all States, across all animal agriculture species, and across all identified areas of need. The identification of needs was also nationally coordinated with input from National animal agriculture organizations, general farm organizations, federal regulatory, research and education agencies, and State agencies. These needs ranged from those of a single State, such as the residue avoidance project with reindeer in Alaska to the critical situation occurring with the green-gut syndrome in bob veal calves which hit hardest in Pennsylvania, New York and Wisconsin.

The guideline for project proposals which was sent to the States described the problem areas that needed to be addressed as well as the more general needs such as educational materials development, intensified educational efforts, consumer survey, and database development. Proposals were funded for one year and a number received additional funding after their progress and further needs had been analyzed.

Projects were funded to address all facets of the problems needing solution. Some States would be surveying violators to determine what went wrong while others would be investigating new residue tests and test kits to determine their ease of use and precision. Projects were funded to educate producers on management practices to avoid illegal residues. Some projects were funded to develop factsheets, slide sets, videos, treatment records, animal identification, and other materials. One project was funded to survey consumers' reactions. Educational materials developed by these State projects were evaluated, adopted and distributed in mass quantities to all States.

Presented by Basil R. Eastwood, Program Leader-Dairy, U.S. Department of Agriculture-Extension Service at the National Integrated Resource Management (IRM) Workshop, Washington, DC, December 12, 1991.

RAP ORGANIZATION AND OPERATION

National Task Force to Coordinate the Residue Avoidance Program:

A National RAP Task Force was formed in March of 1983 to coordinate the industry response to the residue problem. It was composed of individuals from four groups.

- o An active producer from each producer organization in addition to a professional representative.
- o Representatives of industry who supply producers with input products.
- o Regulatory, research and Extension personnel from USDA and FDA.
- o Farm media representatives.

OBJECTIVES:

Implement an education program to help producers avoid illegal residue problems in meat, milk and eggs.

Provide a forum to discuss and develop directions for RAP operation.

Organizations Participating on the RAP Task Force or Attending RAP Meetings:

American Farm Bureau Federation
American Feed Manufacturers Assoc., Inc. (now AFIA)
American Meat Institute
American Veterinary Medical Assoc.
Animal Health Institute
FOOD CHEMICAL NEWS
National Broiler Council
National Cattlemen's Association
National Dairy Herd Improvement Assoc.
National Farmer's Union
National Grange
National Milk Producers Federation
National Pork Producers Council
National Turkey Federation
National Wool Growers Assoc.
Southeastern Poultry and Egg Assoc.
Special Fed Veal Assoc. of America

United Egg Producers
USDA-Agricultural Research Service
USDA-Cooperative State Research Service
USDA-Economic Research Service
USDA-Extension Service
USDA-Food Safety and Inspection Service
USDA-Packers and Stockyards Administration
U.S. Food and Drug Administration (FDA-BVM) (now CVM)

Several subcommittees of the RAP Task Force were formed, including Technical and Scientific, Economic Impact, Special Problems, and Education and Information. One of the Special Problems subcommittees formed was a Veal Calf Subcommittee to address the needs of both bob veal and special fed veal.

The task force held three National RAP Program Workshops, in 1982, 1983, and at the close of the program; as well as a Calf Residue Education/Media Workshop.

National RAP Steering Committee:

The RAP Steering Committee consisted of the Washington representatives of the RAP Task Force organizations. These were largely Forum For Animal Agriculture (FFAA) organizations so the Steering Committee had the same makeup as the current FFAA Steering Committee. This group met approximately every other month in Washington.

Information on the Federal Advisory Committee Act is included as appendix C. Adjustments in federal employee participation were made during the RAP program to avoid violating this act.

State RAP Project Leaders:

Each State had from 1 to 7 RAP Project Leaders, depending on the number of projects and the disciplines involved.

USDA-ES Project Liaison Officers:

Project Liaison Officers were the USDA-Extension Service National Program Leaders in Livestock and Veterinary Medicine.

Dixon Hubbard - Livestock
Ken Holleman - Poultry & Fur Bearing Animals
George Meyerholz - Veterinary Medicine
Basil Eastwood - Dairy

Ad-Hoc Computer Committee:

One priority discussed in the request for proposals in 1982 was the computerization of known data and information about residues and residue avoidance. Five States submitted excellent proposals to develop a National database of residue avoidance information. Each of the five took a different approach. These States were California, Iowa, Michigan, North Carolina, and Florida. Rather than fund a single State project, the five project leaders were asked to serve on an ad-hoc computer committee to ascertain exactly what type of computerized database is needed by the animal agriculture industries and how this could best be accomplished. They were told nothing would be funded in this area until they reached agreement on what was needed.

This committee which included some of the top expertise in the nation went to work in earnest. After several months, several meetings, and numerous letters and phone calls, the committee completed its report. As an indication of the state of microcomputer development at the time, one recommendation was that all projects using computers should use hardware that can run the CP/M operating system.

The committee recommended a single multi-state project in cooperation with the National Agricultural Library and the Food Safety and Inspection Service. The Food Animal Residue Avoidance Databank (FARAD) project was born. FSIS provided a an initial list of the 100 most troublesome chemicals (drugs), the FARAD States did an international literature search on these chemicals, and the National Agricultural Library delivered the requested documents to North Carolina State University. These documents were distributed to Florida and California where Veterinary Science students gleaned the data from the research reports and transferred these data to FARAD computer input sheets. These data were then sent to North Carolina where they were keyed into the computer and analyzed. The output of this process is the FARAD databank.

FARAD has proven to be one of the most successful multistate Extension projects ever developed and has proven itself many times. Major examples of this are the heptachlor situation in Arkansas, Missouri and Oklahoma; and the Chernobyl incident. Less dramatic needs of this national resource occur daily.

ADVANTAGES OF THE RAP MODEL

1. A minimum of bureaucracy was involved in the decision-making process for distributing the funds to the States where the work was to be done. Recommendations to the Administrator of the Extension Service as to which projects to fund were made by the National Program Leaders following review by FSIS, FDA, and other agencies. The NPL's were in close touch with, and accountable, either directly or professionally to the animal agriculture industries, the research and regulatory agencies, the administration, and the public.
2. Project proposals from across the nation could be compared and in a number of instances several states having similar interests were asked to work together to avoid duplication of effort and strengthen the projects.
3. Proposal submissions were monitored to ensure the active participation of states having a strong animal agriculture.
4. Proposal submissions were also monitored to ensure a fair and equitable distribution across animal agriculture species.
5. Proposals were selected that would have major impact on commercial animal agriculture producers through problem solving and education.
6. Multi-State proposals could easily cross the artificial boundaries of our Extension and academic community regions without causing administrative problems.
7. The nation's best expertise could be mobilized to address a problem or development for the benefit of all States.
8. Minor animal agriculture needs could be addressed by funding a single project to address those needs for the entire nation. Examples are the reindeer project in Alaska as well as the rabbit, goat and gamebird projects in Pennsylvania.
9. All proposals were reviewed by the appropriate government agencies and their comments taken into consideration in the selection process.
10. State project leaders understood where their project fit in the national strategy and that each was, in reality, a national project with the results and products to be used in all States. The end result was a strong coordinated national effort with many of the products and results still in use.

DISADVANTAGES

There didn't appear to be any significant disadvantages, although the appearance of undue influence by special interest groups must be avoided.

APPENDIX A

DISTRIBUTION OF 1983 RAP PROJECTS BY SPECIES

Beef --	15 States	Veal --	2 States
Dairy --	20 States	Sheep --	2 States
Swine --	16 States	Goats --	1 State
Poultry --	16 States	Rabbits --	1 State
Reindeer --	1 State	Gamebirds -	1 State

A number of these projects were multi-species.

In 1982, 37 projects were funded for a total of \$1,359,000.

In 1983, 30 projects were funded with \$823,000 distributed.

There were 54 project proposals in 1984. Twenty six new projects were funded and the total funded including those being continued from 1983 was 49. Thirty three States had RAP projects.

APPENDIX B

CASH RECEIPTS FROM LIVESTOCK AND PRODUCTS BY STATES - 1989

- In Billions of Dollars -

Ranking	State	\$\$\$	Ranking	State	\$\$\$
1	Texas	6.8	26	Washington	1.2
2	Nebraska	5.6	27	Tennessee	1.1
3	Iowa	5.2	28	New Mexico	1.0
4	California	5.1	29	Idaho	1.0
5	Wisconsin	4.3	30	Montana	0.9
6	Kansas	4.2	31	Maryland	0.9
7	Minnesota	3.7	32	Arizona	0.7
8	Colorado	2.6	33	Oregon	0.7
9	Pennsylvania	2.6	34	Wyoming	0.7
10	Arkansas	2.6	35	N. Dakota	0.6
11	N. Carolina	2.5	36	Louisiana	0.6
12	Oklahoma	2.4	37	S. Carolina	0.6
13	Illinois	2.2	38	Utah	0.6
14	Georgia	2.2	39	Delaware	0.5
15	Missouri	2.1	40	Vermont	0.4
16	S. Dakota	2.1	41	Maine	0.2
17	New York	1.9	42	Connecticut	0.2
18	Alabama	1.9	43	W. Virginia	0.2
19	Indiana	1.8	44	New Jersey	0.2
20	Ohio	1.7	45	Nevada	0.1
21	Kentucky	1.7	46	Massachusetts	0.1
22	Virginia	1.4	47	Hawaii	0.1
23	Michigan	1.3	48	New Hampshire	0.1
24	Mississippi	1.3	49	Rhode Island	0.01
25	Florida	1.2	50	Alaska	0.01

SOURCE: Agricultural Statistics, 1990, USDA, Table 578, Page 395.

APPENDIX C

FEDERAL ADVISORY COMMITTEE ACT

Advice from the USDA-Office of General Counsel
concerning the RAP Program, March 20, 1984

The Federal Advisory Committee Act (FACA), does not prohibit USDA involvement with groups such as the RAP group. However, utilization of such a group by USDA officials may subject the RAP group to certain requirements of the Act. The FACA, in order to eliminate the undue influence of special interest groups, provides for a broad right of public access to meetings and records of groups serving as advisory committees to the Federal government. USDA is not obliged to comply with the requirements of the FACA unless the group constitutes an advisory committee under the terms of section 3(a)(C) of the FACA. This paragraph defines an "advisory committee" as, --

any committee, board, commission, council, conference, panel, task force, or other similar group, or any subcommittee or other subgroup thereof . . . which is established or utilized by one or more agencies in the interest of obtaining advice or recommendations for the President or one or more agencies or officers of the Federal Government . . .

The District Court has recognized this definition is broad, imprecise, and "not a model of draftsmanship".

The fact a group has been established by the private sector rather than the government does not determine its status as an advisory committee. A group may constitute an advisory committee although it is independent and existed prior to involvement with an agency. The FACA does not regulate the group but the use of it by an agency. Furthermore, an advisory committee may have a "shifting identity". It may sometimes be within the Act and at others not within the Act.

The RAP group would fall under the statutory definition of an advisory committee if it was "utilized" by the Government. The General Services Administration, (GSA), has issued an interim rule in an attempt to shed some light in this area. An advisory committee may be defined as a committee which was "affirmatively supported and 'utilized' by the government through institutional arrangements which amount to the adoption of the groups as a preferred source of advice". A Federal official "utilizes" a committee when the "individual recognizes, uses, or intends to use the committee as a preferred source of advice on specific, identified government policy within that individual's scope of responsibility." The GSA interim rule lists examples of advisory meetings or groups not covered by the FACA. The examples include meetings called by Federal officials for the purpose of exchanging facts or information; for the purpose of expressing the group's view, provided that the group is not used as a preferred source; for the purpose of obtaining the advice of individual attendees but not for the purpose of utilizing the group to obtain consensus advice or recommendations; or meetings which deal with primarily operational as opposed to advisory functions. However, agencies are specifically cautioned that even though a

group may fit within one of the above-listed examples, the group may nevertheless become subject to the FACA if a pattern develops whereby an agency seeks advice from the group in such a way it becomes a preferred source of advice. A number of factors enter into a determination of whether or not a group has been utilized by an agency. An advisory committee subject to FACA is likely to have an organizational structure, stable membership and a continuing existence. Although generally an ad hoc, amorphous group meeting not conducted to obtain advice on a specific topic will not be subject to the FACA, where meetings concern the drafting of proposed regulations the Act clearly applies.

Where meetings are conducted between agency officials and industry members for the betterment of a voluntary, industry sponsored program and not to consider proposals dealing with impending agency action, the Act will not apply. By its nature, an advisory committee considers matters and offers recommendations which will ultimately be presented to government officials for final decision.

The RAP steering committee and the subcommittees of the RAP group are described as subgroups of the task force. If these subgroups do not act in an independent advisory capacity but merely provide information to the task force, the steering committee and subcommittees may not be subject to requirements of the FACA. This is not to suggest USDA may circumvent requirements of the FACA through exclusive involvement with subgroups of the RAP group. If the steering committee or a particular subcommittee serves as a preferred source of advice and provides information which impacts agency action or policy, it has then acted in an independent advisory capacity and is subject to requirements of the FACA.

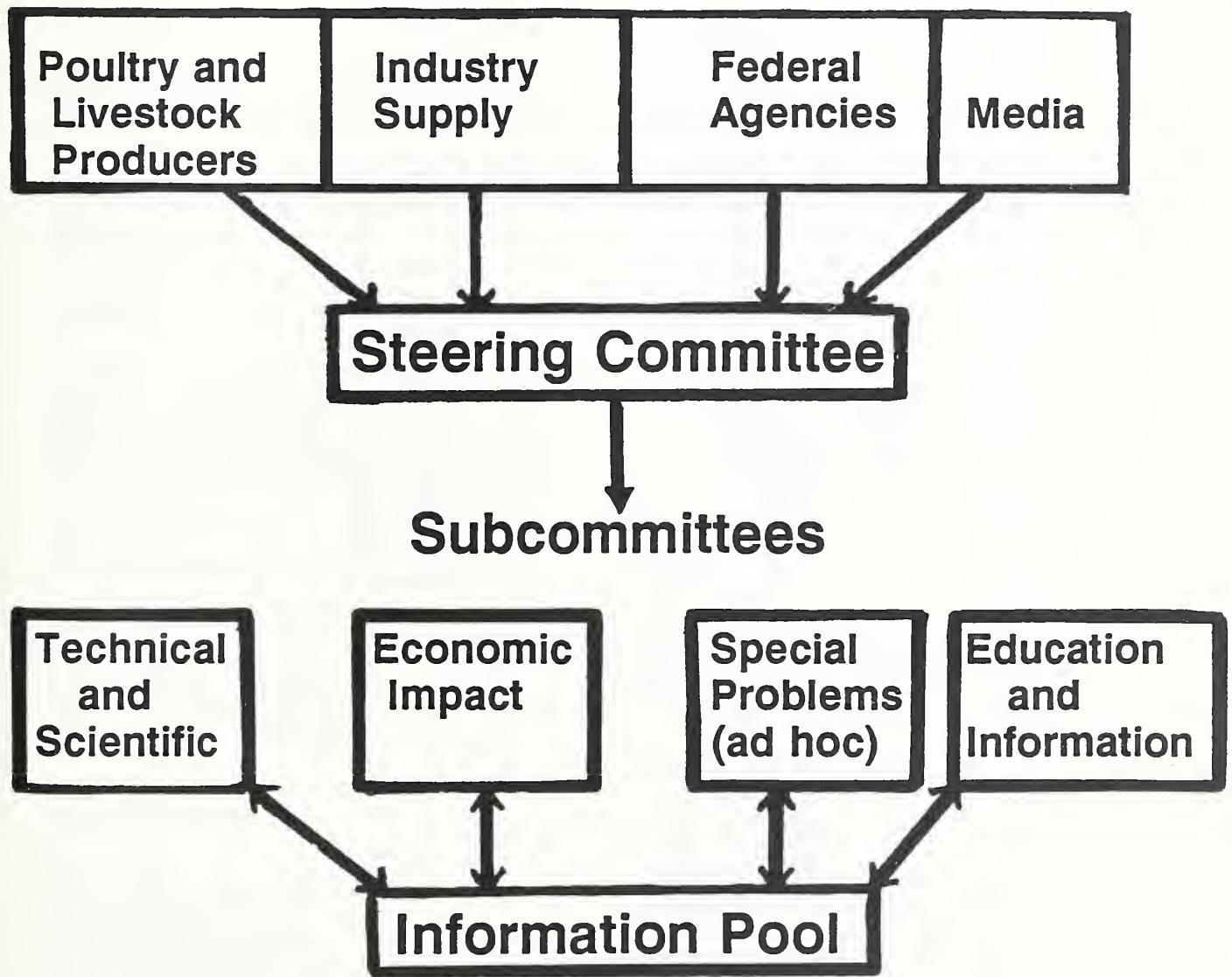
Alternatives and Suggestions:

- o If USDA wishes to maintain the current level of involvement with the RAP group, GSA approval of the group as an advisory committee is recommended.
- o If USDA officials choose to maintain contact with the RAP group without seeking GSA approval, contact should be minimized and limited in scope. Meetings may occasionally be conducted to exchange facts or information but consensus views of the group may not be used as a preferred source of advice in the formulation of agency policy.
- o Establish and document other sources of advice in regard to residue issues in order to counter the argument that the RAP group is the preferred source of advice on these issues.
- o Have the Group's members deal with USDA personnel individually rather than through the mechanism of the Group. Any inconvenience created by this would probably be more than offset by reduction of the risk of being held in violation of the FACA.

SOURCE: Communication from Robert L. Siegler, Acting Assistant General Counsel, Research and Operations Division, USDA-Office of General Counsel, March 20, 1984. Excerpted by Basil R. Eastwood, Program Leader-Dairy, USDA-Extension Service.

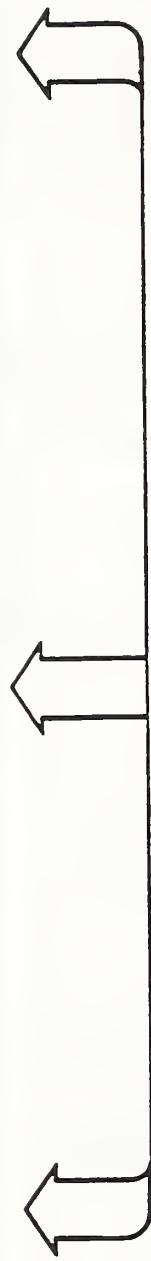
COORDINATED EDUCATIONAL & INFORMATION PROGRAM

National RAP Task Force



RESIDUE AVOIDANCE PROGRAM

State Agency Information
Projects Review Development Dissemination



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